To the medical man who would reap the advantages held out by Dr. Poore, *we confidently suggest the value of this journal* as a means of accomplishing the ends desired, at the least cost, and most convenient form. The impecunious can thus avoid the purchase of the mass of scientific literature with which the market is flooded, and the overworked practitioner receiving the journal weekly is not embarrassed by redundancy, and yet can safely rely on passing nothing of importance, while articles of special interest to the profession will be constantly brought before his notice.

In the previous numbers of "SCIENCE" may be found valuable articles by Professors Burt G. Wilder and Sage, of Cornell; Drs. Hammond and Spitzka, of New York; Dr. Clemenger, of Chicago; Dr. J. A. Mason, of Newport, and many other specialists of equal merit.

Now the value of a knowledge of science, as a means of "getting on" as Huxley terms it, is indubitable, and while there are few trades in which some knowledge of *science* may not be profitably applied to the pursuer of his occupation, we think that the words of Dr. Poore must carry conviction, that the *student* or Physician who would attain the higher stages of development of his art, must be kept "*au courant*" with such facts and principles, which are weekly published in "SCIENCE," for they will probably find their application in every intelligible diagnosis and discussion on medical practice.

"SCIENCE," November 5th, 1881.

WE learn with regret that Dr. Ed. C. Spitzka, who has been requested to appear in the Guiteau case, by both the Government prosecutor and counsel for the defence, has declined to attend.

The question of mal-practice is not likely to be seriously entertained at the trial, and the whole issue will probably rest upon the evidence touching the insanity of the prisoner.

We should judge from the published papers of Dr. Spitzka that his evidence would be in favor of the prisoner's insanity; it becomes, therefore, the more important that he should attend, as it would avoid the suspicion, in case of conviction, that the assassin had not received a fair trial.

NEW YORK ACADEMY OF SCIENCES.*

October 3, 1881.

REGULAR BUSINESS MEETING.

Vice-president Dr. B. N. Martin in the Chair.

Twenty-five members present.

After the transaction of business, the members were invited, in accordance with the usual custom at the first meeting of the season, to present notes and observations gathered during the summer, and responses were made by Mrs. E. A. Smith, Prof. C. A. Seeley, and others.

Mr. W. L. Chamberlain referred to the gold deposits recently opened in Fulton and Saratoga counties, N. Y. The ore consists of auriferous pyrites and is contained in the gneiss of the foothills of the Adirondacks.

* Official Report.

Remarks were made, by a member, on a visit to the sandstone quarries at Portland, Conn.: by Mr. Todd, on a peculiar atmospheric phenomenon, a vaporous band stretching across the sky, apparently not auroral, observed in the Adirondacks: and by Dr. Martin, on a remarkable atmospheric coloration, luminous brilliance of the clouds, etc. observed last month at Saratoga, in the early morning, attributing it to an abundance of a smoky fog produced by the recent forest fires, and calling attention to the fact that this phenomenon has been noticed only in the territory east of the meridian of Saratoga.

Mrs. P. Hanaford described the same appearances as seen during the "Yellow Day" Sept. 6, near Boston, and also on Nantucket: another member, as seen in the Genesee valley, explaining that the strong West and Northwest winds prevailing at the time had wafted high in the air vast volumes of smoke derived from the abundant forest fires throughout Western N. Y.: Messrs. Todd, Chamberlain, and others, describing the electric brilliance of the gas-lights, the strange modification of the green color of foliage, the absence of smoky odor, etc., as observed at Great Barrington, Mass., and in less degree in New York city: Mr. N. L. Britton, on the same facts as observed out at sea, off Fire Island and Montauk Point, Long Island, N. Y.: Prof. D. S. Martin, as observed between Saratoga and Catskill, N. Y., and Prof C. A. Seeley, calling attention to the extremely attenuated character of the carbon particles, produced by their long transportation from distant localities.

Mr. Geo. F. Kunz mentioned that Mt. Mica, at Paris, Maine, the locality so famous for colored Tourmalines for the last fifty years, had been purchased by a Mining Company and was being worked for Cassitterite, Mica and Tourmaline, principally through the efforts of Dr. A. C. Hamlin of Bangor, Maine.

Dr. Hamlin has the finest known collection of American Tourmaline, and he recently reported the finding of a crystal three inches long and one-half inch thick, a transparent gem, of a beautiful blue-green color. This was taken from the new mine, and many more remarkable specimens may be expected as the work advances.

Mr. Kunz said that during the last year a German Agate-hunter returned to his native country after 20 years collecting in Brazil, taking with him a large suite of fine colored Tourmalines, some five inches long and not more than one-eighth of an inch thick, transparent, and of a green color; also many fine green crystals with red, yellow, white, and other colored centres, many of these equalling for variety of color anything yet found, most of which will cut as gems. There is also in this lot one exceptionally fine green crystal over one inch square. This collector brought with him also at least 1000 kilos of transparent yellow Spodumene, the same as that described by A. Pisani of Paris some eighteen months ago, and is dissimilar only in color to the new variety of Spodumene found at Stony Point, North Carolina, described in the February number of the *American Journal of Science* for 1881, by Dr. J. Lawrence Smith, as Hiddenite. Some of the specimens which he brought will cut as fine yellow gems. All these were found in the Minas Geraes district. Recently a new locality for Chrysoberyl has been found in Ceylon, where they occur of gem value in an unusual variety of color. They vary in color from yellow to brown, and from brown to green. The latter color is the variety known as Alexandrite. This gem has heretofore been found but of very inferior size and color, but here it occurs of remarkable size, having in one case afforded a gem weighing 26 kts. They are a beautiful green color by day and a Columbine red, or brownish red, by night. The Chrysoberyl Cat's Eye is found here of the same color, and possessing the same dichroic property as the Alexandrite, viz., changing color, from green to red, and hence might very properly be called an Alexandrite Cat's Eye. Many of the Chrysoberyls are erroneously called and sold as a variety of sapphire.

SECTION OF CHEMISTRY.

October 10, 1881.

Vice-president Dr. B. N. Martin in the Chair.

Nineteen members present.

A paper was read by Mr. James H. Stebbins, Jr., of which the following is an abstract:

ON SOME NEW SALTS OF THYMOLE SULPHO-ACID, AND SOME NEW FACTS CONCERNING THE SAME.

60 grms. thymole were dissolved in 50 grms. 66° sulphuric, at a temperature of 100 C. The pink crystalline mass so obtained was dissolved in water, and converted into the lime salt.

This salt crystallizes with two molecules of water, in rhombic plates, and shows under the polariscope a beautiful effect of circular polarized light.

FORMULA.

$$a\ (C_6 H_2 (C H_3) (C_3 H_7) (O H) (S O_3)_2 Ca + 2 H_2 O$$

a. Calcium salt of alpha thymole sulpho-acid.

AMMONIUM SALT.

This salt was obtained by decomposing the lime salt, with ammonic carbonate. It crystallizes in white rhombic plates, with 2 mols. of water.

FORMULA.

$$a\ C_6 H_2 (C H_3) (C_3 H_7) (N H_4 S O_3)\ a H + 2 H_2 O.$$

The soda salt has likewise been obtained, and will be described in a subsequent paper.

Remarks were made by Mr. James D. Warner on the nature of the corona of the Sun, etc. Mr. Stebbins reported the yellow coloration of the atmosphere in September at the Thousand Islands in the St. Lawrence.

SECTION OF GEOLOGY AND MINERALOGY.

October 17, 1881.

The President, Dr. J. S. Newberry, in the Chair.

Fifty-one persons present.

Dr. Newberry exhibited specimens of Native Lead and Oxide of Lead from a mine in the Wood River country, Idaho, crystallized gray copper, and fine crystallized Rhodochrosite from the Ulay mines, Southwest Colorado.

Prof. T. Egleston pronounced the crystals of rhodochrosite to be the finest specimens ever yet found. He further called attention to the discovery of the presence of tellurium in merchant copper from Lake Superior. This curious specimen of native copper pig was found to contain about 0.5 per cent. of that element, which has never yet been detected in the copper. In the furnace the pig yields dense white fumes; it is useless for brass, etc., and only fit for the manufacture of cupric sulphate for batteries. With the tellurium are associated a little silver and gold, which are found not to be uniformly distributed, as hitherto supposed, but so variably that the proportion of silver varies widely in portions taken from the furnace within ten minutes of each other.

Dr. J. S. Newberry then remarked on "Geological Facts recently observed in Montana, Idaho, Utah and Colorado."

Idaho and Montana.—The famous placers at Helena and Virginia, which have yielded thirty millions of dollars, are now exhausted, but vein-mining is in successful progress and yielding rich results at Butte, at the Alice, Lexington, Copper Bell, and other mines. These are true fissure veins, traversing a granite formation, and the speaker predicted their abundant yield of silver and copper twenty years hence. These territories have been simply crossed by two government expeditions and their resources have not been at all studied. It is the coming mining region, more discoveries of promising mines having been recently made here than in any other portion of the country. On the east of the mountains in Montana and Wyoming lies a fine agricultural country and excellent stock range, the herds ranging freely throughout the winters, in spite of their severity, with little loss, and grazing upon a native bunch-grass (*Festuca scabrella*) and the buffalo grass (*Buchloe dactyloides*). The climate is salubrious, the country very beautiful in many parts and very promising for emigration. In the adjacent Rocky Mountain range there are also many mining opportunities.

The remarkable lava plain, 400 miles long by 75 miles wide, in Central Idaho, was then described.

Snake River, one of the chief tributaries of the Columbia, flows along its southern border for several hundred miles; its northern tributaries sinking under the lava sheet and flowing in subterranean channels 50 or 60 miles long. The rock is a basalt said to contain everywhere a small quantity of gold and silver. It is generally covered with an impalpable soil that produces a dust excessively annoying to the traveler, and sustains a general growth of sage brush. In places, however, the rock is bare and looks like a congealed stormy sea.

Three buttes are set on the surface of this lava plain, and each has probably been a local volcanic vent; but it is probable that most of this eruptive material has been an overflow from great fissures of which the position is not indicated on the surface.

Snake River crosses a portion of this plain in a cañon at the head of which are the great Shoshone Falls, 208 feet in vertical altitude.

An alluvial plain borders Snake River for 200 miles, abounding in black sand which contains much gold. This is, however, extremely fine, having been transported a long distance from its place or origin, and therefore difficult of separation. New and promising methods and machines are about to be tried in the exploitation of these extensive deposits. A wide mountain belt extends from the north side of the lava plain to and beyond the British line, and is apparently a good mining country throughout. Already a great number of productive and promising mines are opened in the southern portion of this belt. In the Wood River district the veins are not large, but numerous, regular and persistent, and the ore of high grade—mostly argentiferous galena, carrying $100 to $500 in silver to the ton. Near Challis, further north, is the celebrated Ram's Horn mine, located on a true fissure vein, generally not more than five feet wide, but continuous for more than five miles. The wall rocks are slate, the vein stone siderite (carbonate of iron), the ore gray and yellow copper, yielding $100 to $1200 in silver to the ton. A few miles west of Challis is the mining town of Bonanza, where are located the celebrated Charles Dickens and Custer mines, carrying both silver and gold. Still further west in the Saw-Tooth range, a high and very picturesque mountain chain running north and south, recent discoveries of valuable mines have been made. From this district north to the Canadian line, a broad mountain belt extends over northern Idaho and northwestern Montana, a country which abounds in veins of silver, copper and gold. Among the mines now worked in this region the most celebrated is the Drum Lomond, in Montana. It is opened on a large vein of rich quartz and is owned by an old miner who cannot read, but who is said to have refused a million of dollars for the property. It is probably worth much more than this.

Most of the mountainous districts of Idaho and Montana are covered with coniferous forests, consisting of the Douglas spruce and the northern nut pine, *Pinus*

flexilis. The smaller plants form an Alpine flora of much interest, including many beautiful flowering species; perhaps the most striking being *Bryanthus*, which has a fine fir-like foliage and clusters of beautiful purple flowers. It belongs to the heath family and closely resembles the heather of Scotland.

The streams of this region are clear, cold, and rapid, and abound in fish, chiefly of the salmon family, and these have given the name to Salmon River, the principal water course.

Two species of salmon were running up the Salmon River, one the large Quinnat or Chinook salmon, comparatively rare, and the other the "red fish" (*Oncorhynchus nerka*). This is a small salmon, 15 to 18 inches in length, and weighing 3 to 5 pounds. As seen in their migration their bodies are brick red to purple in color, the heads dark or light green; they were then going up to their spawning ground, Redfish Lake, one of a half dozen of small lakes on the head waters of the Columbia, which are the special breeding places of this interesting fish. Coming all the way from their abode in the ocean, led by an infallible but inscrutable instinct, they push on night and day till they reach their remote birthplaces in these little lakes far up in the mountains and 1000 miles from their starting point. Here they accomplish apparently the great object of their lives, the reproduction of the species, by depositing the spawn in the shallows of the rivulets which fall into the lake.

The always attractive coloring of the fish, during this nuptial season becomes greatly heightened; the body assumes a brilliant, almost luminous red, as bright as that of the gold fish, and where numbers are dashing through the water literally in a blaze of excitement, they produce an exhibition that is strikingly novel and interesting.

When the spawning season is over they probably do not return, as none are seen descending the rivers. The young fish start on their migration to the ocean while yet very small, and within the first year of their lives, remaining away it is supposed some three or four years during which they acquire their full growth when they return to die where they were born.

An active industry has grown up in the capture of the red fish in their annual migrations, but it is pushed with so much energy and unsparing cupidity that their numbers are rapidly diminishing and the species will apparently be soon extirpated in these waters unless protected by legal enactment.

A branch of the Union Pacific Railroad is being constructed from Granger, Wyoming, to the mouth of the Columbia. On this a large amount of traffic is expected, as it will link together many settlements having a considerable resident population and traverse in different portions of the route rich agricultural and mining districts.

Dr. Newberry then briefly described a small but remarkably rich placer gold deposit he visited on the west flank of Mount Wheeler, the highest mountain in Nevada, and mentioned the discovery of an outcrop of lower silurian rocks full of fossils, including several new trilobites discovered by him in Southwestern Utah, but deferred all details till he should make them the subjects of special remark to the Academy.

Colorado.—Reference was made to the general character of Southwestern Colorado, the interesting topography of the region, especially the vast plateau which rises westward from the base of the Rocky Mountains on to the slopes of the Wasatch; the ascent of Marshall's Pass by the Denver and Rio Grande Railroad, the most remarkable feat of railroad engineering performed in the country, and the exceedingly picturesque region about the Pagosa the greatest hot spring on the continent. Where the San Juan river issues from the mountains a prairie occurs, surrounded by picturesque forest-clad hills, and with a beautiful view of snow-clad mountains in the distance. In the centre of the prairie lies a basin 40 by 60 feet across, boiling like a huge caldron, the ebullition being produced by the violent escape of carbonic acid gas. The banks are lined by the remains of beetles, snakes, etc., destroyed by too trustful reliance upon the hot waters, and by interesting mineral deposits. This is one of the most beautiful places in the country and likely to be a famous resort.

Along the route from Pueblo to Gunnison and Lake City, and thence eastward by Del Norte, there are some places of resort for invalids and pleasure-seekers, which are destined to be very well known, being far more beautiful and salubrious than the now celebrated localities at Manitou and Colorado Springs. One of these is Wagon Wheel Gap, on the Rio Grande. The river is a rapid, turbulent stream, and the Gap is seven to ten miles long, just wide enough to permit a wagon-road. Then a wide, open space is reached, the basin of an ancient lake, girdled by a wonderfully beautiful amphitheatre of mountains. Here 8500 feet above the sea, the hot springs, charming rides, fine hunting and fishing, an atmosphere as pure and clear as crystal, constitute the attractions of a resort, which far surpasses any other, and which will be reached by the railroad now being pushed through the Gap about January 1, 1882.

From Gunnison, specimens have been recently brought of magnetite and hematite, which probably represent inexhaustible masses, and at Crested Butte, within twenty-five miles of this locality, is found the best coking coal in the West. The region borders on a volcanic area, and the coking coal is from that portion of the basin, which has mostly escaped the alteration by volcanic heat. It is firm and not affected by the weather, with a small amount of ash and sulphur.

On Anthracite Creek are found many thousand acres of Anthracite of better quality than that of Pennsylvania. Recent analysis made at the School of Mines shows it to contain less than one per cent. of sulphur, and three per cent. of ash.

The forest vegetation of Colorado is very simple. The piñon or nut pine is very common, also the yellow pine (*P. ponderosa*), Douglas' spruce, Menzies' spruce, etc. In the mountains the general vegetation is picturesque but not so varied as in the lowlands. The following plants are among the most characteristic in the lowlands of Colorado and Utah.

The evening primrose (*Œnothera Cæspitosa*) with its large beautiful white flowers.

The wild tobacco (*Nicotiana attenuata*.)

The sun flower (*Helianthus*.)

The bee flower (*Cleome integrifolia*) presenting purple acres by the roadside, and the yellow species (*C. lutea*) less common.

The American primrose (*Primula Parryi*.)

The pasque flower (*Anemone patens, Var. Nuttalliana*.)

The *Eriogonums*, about twenty species, coloring whole mountain sides yellow.

The Oregon grape (*Berberis aquifolium*.)

Phacelia circinata in tufts of purple flowers on rocky slopes.

The lily (*Calochortus Gunnisoni* and *C. Nuttalli*) or "blackeyed Susan" (Indian—"Seego,") very plenty in the moister portion of the sage-plains.

The clematis (*Anemone alpina*) with its purple flowers.

The penstemons, of which 20 or 30 species are peculiar to that country, deep crimson, pink, and purple and blue in color, often very showy, and so abundant that whole acres of ground are colored by them.

The columbine (*Aquilegia canadensis*,) and also a much larger species (*A. cerulea*.) clothing the mountains of Colorado and Utah, with blue, cream-colored, and white flowers. A large number of dried plants were exhibited from a collection of several hundred species just brought on from Colorado, with collections procured from Prof. Marcus Jones of Salt Lake City, and others.